

optical fiber connection component which is easy to adjust the distance between the optical fiber ends upon aligning the optical fibers and, particularly, those coats of which have been removed, in case of connecting optical fibers  
5 led out of the edges of optical elements, optical circuit packages, optical circuit devices, etc., and which hardly damages the optical fibers during carrying or connection, and saves the number of parts and the cost. Another object of the present invention is to provide an optical  
10 fiber connecting method using said optical fiber connection components, and to provide an optical fiber connection structure formed by said method.

#### DISCLOSURE OF THE INVENTION

15 An optical fiber connection component according to the present invention comprises a connection member having one or a plurality of through-holes for optical fibers provided with guides for rodlike coupling member at or near both side edges, rodlike coupling members, and a plug  
20 having guide holes for rodlike coupling members, wherein said connection member is arranged slidably in the plug by means of the rodlike coupling member inserted in said plug.

In the present invention, the guide may have a form  
25 of through-hole or groove. The rodlike coupling member is preferred to be cylindrical. In the present invention, two or more of the above-mentioned connection members may be installed in the plug. Further, the plug to be used may have one or more through-holes or grooves for  
30 inserting optical fibers.

An optical fiber connecting method according to the present invention comprises providing the above-mentioned two optical fiber connection components, inserting optical

fibers into through-holes of the connection members respectively, opposing the connection members of said two optical fiber connection components to each other, bringing the through-holes of both connection members face to face with each other, and sliding both connection members in a direction of the center axis of the optical fibers along the rodlike coupling member guided by the guide, so that the optical fibers are connected in the through-hole of one connection member.

10 In the above-mentioned case, the optical fibers inserted to the through-holes of the connection member may be fixed to the plug by an adhesive. Further, the above-mentioned two optical fiber connection components may be attached to an adapter so as to bring the through-holes of the connection members face to face with each other.

The optical fiber connection structure according to the present invention is characterized in that it is connected by the above-mentioned connecting method.

Namely, it has a structure which comprises two optical fiber connection components composed each of a connection member having one or a plurality of through-holes for optical fibers provided with guides for rodlike coupling member at or near both side edges, rodlike coupling members, and a plug having guide holes for rodlike coupling members, and optical fibers inserted into the through-holes of the connection members of said two optical fiber connection components, wherein said connection member is arranged slidably in the plug by means of the rodlike coupling members inserted in said plug, and said structure being formed by opposing two optical fiber connection components in such a state that the optical fibers are inserted respectively in said through-holes for the optical fibers, bringing the

CLAIMS FOR PATENT

1. An optical fiber connection component which comprises a connection member having one or a plurality of through-holes for optical fibers provided with guides for rodlike coupling member at or near both side edges, rodlike coupling members, and a plug having guide holes for rodlike coupling members, wherein said connection member is arranged slidably in said plug by installing by means of the rodlike coupling member inserted in the plug.

2. The optical fiber connection component according to Claim 1 wherein said guide is a through-hole or a groove.

3. The optical fiber connection component according to Claim 1 wherein said rodlike coupling member is cylindrical.

4. The optical fiber connection component according to Claim 1 wherein two or more connection members are arranged in the plug.

5. The optical fiber connection component according to Claim 1 wherein said plug is provided with a through-hole(s) or groove(s) for inserting the optical fiber.

6. An optical fiber connecting method which comprises opposing two optical fiber connection components comprising each a connection member having one or a plurality of through-holes for optical fiber provided with guides for rodlike coupling members at or near both side edges, rodlike coupling members, and a plug having guide through-holes for rodlike coupling members, wherein said connection member is arranged slidably in said plug by installing by means of the rodlike coupling members inserted in said plug in such a state that the optical fibers are inserted respectively in said through-holes for

optical fiber, bringing the through-holes of both connection members face to face with each other, and sliding said connection members in a direction of the center axis of the optical fibers along the rodlike coupling members guided by the guides, so that the optical fibers are connected in the through-hole of one connection member.

7. The optical fiber connecting method according to Claim 6 wherein optical fibers inserted respectively in the through-holes of the connection members are fixed to the plugs by an adhesive.

8. The optical fiber connecting method according to Claim 6 which comprises attaching said two optical fiber connection components to an adapter and bringing the through-holes of them face to face each other.

9. An optical fiber connection structure which is formed by opposing two optical fiber connection components comprising each a connection member having one or a plurality of through-holes for optical fiber provided with guides for rodlike coupling member at or near both side edges, rodlike coupling members, and a plug having guide through-holes for rodlike coupling members, wherein said connection member is arranged slidably in said plug by installing by means of the rodlike coupling members inserted in said plug, in such a state that the optical fibers are inserted respectively in said through-holes for the optical fibers, bringing the through-holes of both connection members face to face with each other, and sliding said connection members in a direction of the center axis of the optical fibers along the rodlike coupling members guided by the guides, so that the optical fibers are connected in the through-hole of one connection member.

10. The optical fiber connection structure according to Claim 9 wherein a refractive index matching agent is used for connecting the optical fibers.

11. The optical fiber connection structure according  
5 to Claim 9 wherein the optical fiber connection component is fixed to an adapter.